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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/617,556	07/17/2000	Douglas P. Hart	MIT-04488	8301

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EXAMINER

BINDA, GREGORY JOHN

ART UNIT	PAPER NUMBER
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3679

DATE MAILED: 12/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/617,556

Applicant(s)

HART ET AL

Examiner

Greg Binda

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Drawings

2. The drawings were received on Oct 17, 2003. These drawings are approved.

Claim Rejections - 35 USC § 102

3. Claims 25, 28-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Workman, US 3,497,225.
 - a. Claim 25. Figs. 1-5 show a seal assembly comprising: a first surface 30, said first surface 30 comprising a unitary seal ring 14, 20 bonded (see also col. 2, line 52) to a mounting ring 18, the seal ring comprising an outer peripheral edge 28 and protrusions 43, 45, 47 interior to the outer peripheral edge extending outward from the first surface 30; and a second surface (see "circumference" in col. 3, lines 5 & 6) in motion 57 relative to the first surface. Fig. 6 shows that the first and second surfaces contact and produce a seal.
 - b. Claims 28 & 29. Fig. 5 shows the protrusions 43, 45, 47 are identical and equidistant.
 - c. Claim 30. In col. 4, line last and col. 5, line first, Workman discloses that the motion 57 is rotational.
 - d. Claim 31. Fig. 5 shows the outer peripheral edge 28 is curved.
 - e. Claim 32. Fig. 2 shows the outer peripheral edge 28 is raised.

4. Claims 25, 28-32 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by any one of Vossieck et al, US 4,084,826 and Gorich, US 3,973,781.

Claim Rejections - 35 USC § 103

5. Claims 25, 26, 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNickle et al, US 5,558,341 (McNickle).

- a. Claim 25. Figs. 1-4 show a seal assembly comprising: a first surface 42, said first surface comprising a seal ring 8 bonded 43 to a mounting ring 2, 24, the seal ring comprising an outer peripheral edge 48 and protrusions 66 interior to the outer peripheral edge extending outward from the first surface 42; and a second surface (of the shaft 6) in motion relative to the first surface. Fig. 1 shows that the first and second surfaces contact and produce a seal. McNickle shows the seal ring 8 comprises four separable segments 10, but does not show the seal ring in the form a unitary ring. However, it would have been obvious to one of ordinary skill in the art to integrally form the segments 10 into a unitary seal ring, since such a modification would have involved a mere making integral an assembly of separable parts. Making integral an assembly of separable parts is generally recognized as being within the level of ordinary skill in the art. *In Re Larson*, 144 USPQ 347 (CCPA 1965).
- b. Claim 26. Figs. 3 & 4 show the protrusions 66 include recesses 68.
- c. Claims 28 & 29. Figs. 3 & 4 show the protrusions 66 are identical and equidistant.
- d. Claim 30. In col. 4, line 35, McNickle discloses that the motion is rotational.

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- e. Claim 31. Fig. 3 shows the outer peripheral edge 48 is curved.
- f. Claim 32. Figs. 3 & 4 show the outer peripheral edge 48 is raised.

6. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Workman in view of Blackman et al, US 5,452,771 (Blackman). Fig. 5 shows the textured surface 30 with protrusions 43, 45, 47 that have triangular shape, but does not show the protrusions with a cylindrical shape. In Figs. 4B & 4C, Blackman shows that a textured surface having triangular protrusions and a textured surface having cylindrical protrusions are art recognized equivalents. It would have been obvious to one of ordinary skill in the art to modify the seal assembly of Workman by making the textured surface with cylindrical protrusions instead of triangular protrusions since textured surfaces with cylindrical protrusions and triangular protrusions are art recognized equivalents as shown in Blackman.

7. Claims 33 & 36-40 rejected under 35 U.S.C. 103(a) as being unpatentable over Workman in view of Fern, US 3,930,655. As noted in item 3 above, Workman show a seal assembly including all the limitations of the claims except Workman shows the seal ring surface on a stationary member instead of a member that is in motion. In Figs. 8 & 9 Fern shows that a seal assembly with a seal ring surface on a member in motion (Fig. 8) is an art recognized equivalent of a seal assembly with its seal ring surface on a stationary member (Fig. 9) Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the seal assembly of Workman by attaching the seal ring to a member in motion instead of one that is stationary because a seal assembly with a seal ring attached to a member in motion is an art

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recognized equivalent of a seal assembly with a seal ring on a stationary member as shown by Fern.

8. Claims 33 & 36-40 rejected under 35 U.S.C. 103(a) as being unpatentable over any of the references cited in item 4 in view of Fern for the same reasons noted in item 7.

9. Claims 33, 34 & 36-40 rejected under 35 U.S.C. 103(a) as being unpatentable over McNickle in view of Fern, US 3,930,655 for the same reasons noted in item 7.

10. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Workman in view of Fern as applied to claim 33 above, and further in view of Blackman for the same reasons noted in item 6.

Response to Arguments

11. Applicant's arguments with respect to claims 25-40 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (703) 305-2869. The examiner can normally be reached Monday through Thursday from 9:30 am to 7:00 pm. The examiner can also be reached on alternate Fridays. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne, can be reached on (703) 308-1159. The fax phone number is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2168.



Greg Binda
Primary Examiner
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